Renewable Energy in North Dakota

Biodiesel

Biodiesel is the name for a variety of ester-based oxygenated fuels made from soybean oil or other vegetable or animal fats. The concept of using vegetable oil as a fuel dates back to 1895 when Dr. Rudolf Diesel developed the first diesel engine to run on vegetable oil. Diesel demonstrated his engine at the World Exhibition in Paris in 1900 using peanut oil.

If all diesel fuel used in North Dakota was a 20% biodiesel blend, nearly 1/3 of the state's soybean crop would be consumed!

Ethanol

Ethanol is generally mixed with gasoline to form a blend known as "gasohol." Common blends include either 10% ethanol or 85% ethanol mixed with gasoline. Ethanol is environmentally friendly because the ethanol molecule contains oxygen, which aids engines in the complete combustion of fuel. Ethanol is produced from plants such as corn and is considered a renewable fuel.

North Dakota's two ethanol plants at Walhalla and Grafton can produce 34 million gallons of ethanol annually!

Wind Energy

Wind energy development will contribute to economic development in rural communities and offer farmers and ranchers an additional opportunity to diversify their operations. Excluding the initial capital investment, 1000 megawatts of wind would produce an annual statewide economic benefit of $9.88 million, not including more than $91 million in sales of generated electricity.

North Dakota has 138,400 megawatts in potential wind-generated power!

Endangered or Threatened Species in North Dakota

- Whooping crane
- Interior least tern
- Black-footed ferret
- Western prairie fringed orchid
- Bald eagle
- Pallid sturgeon
- Piping plover
- Gray wolf

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NORTH DAKOTA AGRICULTURE AND THE ENVIRONMENT

Did You Know?

- Agricultural land provides food and habitat for 75% of our nation's wildlife.
- According to a recent national poll, 78% of consumers rated farmers as doing an excellent or good job of taking care of the land.
- The State Waterbank Program provides participating landowners with financial incentives to preserve wetlands. Agreements are for five to ten years.
- There are 7,754 registered pesticide products and 1,824 registered fertilizer products in North Dakota.
- NDDA has designed the Dairy Pollution Prevention Program, which is a voluntary waste prevention program to identify, reduce, or eliminate any release of livestock waste into the waters of the state. The program provides technical, education, and economic assistance to dairy producers who voluntarily cooperate in improving waste management practices.
- Each year, hundreds of thousands of trees are planted on farmland.

What is a Wetland?

The term "wetland" refers to land transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Also, wetlands generally have a predominance of hydric soils, support hydrophytic vegetation typically adapted for life in saturated soil conditions, and under normal circumstances, are able to support a prevalence of hydrophytic vegetation.

North Dakota has 2.49 million wetland acres.

Types of Conservation Tillage

Each year, conservation tillage significantly reduces soil erosion by wind and water.

Mulch-till: The soil is disturbed just prior to planting. Weed control is accomplished with herbicides and/or cultivation.

Ridge-till: The soil is left undisturbed from harvest to planting except for nutrient injection. Weed control is accomplished with herbicides and/or cultivation. Ridges are rebuilt during cultivation.

No-till: The soil is left undisturbed from harvest to planting except for nutrient injection. Weed control is accomplished primarily with herbicides.

Conservation can be defined as the protection, improvement, and wise use of natural resources to provide the greatest social and economic value for the present and future.

What is a Conservation Buffer?

Conservation buffers are small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns. Buffers include: riparian buffers, filter strips, grassed waterways, shelterbelts, windbreaks, living snow fences, contour grass strips, cross-wind trap strips, shallow water areas for wildlife, field borders, alley cropping, herbaceous wind barriers, and vegetative barriers.

North Dakota has 3.3 million acres enrolled in the Conservation Reserve Program.

What is the Conservation Reserve Program (CRP)?

The CRP is a voluntary program that offers annual rental payments, incentive payments for certain activities, and cost-share assistance to establish approved cover on eligible (usually marginal or highly erodible) cropland.

North Dakota's Noxious Weeds

Absinth wormwood
Canada thistle
Dalmation toadflax
Diffuse knapweed
Field bindweed
Leafy spurge
Musk thistle
Purple loosestrife
Russian knapweed
Saltcedar
Spotted knapweed
Yellow Starthistle

Forty-four North Dakota counties participate in new invasive weed mapping.

Over 100 million flea beetles were collected and distributed during Summer 2001 to control leafy spurge throughout the state.

What are noxious weeds?

Weeds may be declared noxious weeds if they are difficult to control, easily spread, and injurious to public health, crops, livestock, land, or other property.

Thirty-nine ND counties receive cost sharing dollars from NDDA to reimburse their chemical and biological expenditures for controlling noxious weeds.

What is organic agriculture?

Organic agriculture is an ecological production management system that promotes and enhances biodiversity cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.

North Dakota leads the nation in certified organic grain crop acreage!

NDDA collected nearly 74 tons of unusable pesticides in 2001 through the Project Safe Send program. Since the first collection in 1992, more than 564 tons of unusable pesticides have been collected, shipped out of state and destroyed.